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Worksite Cancer Prevention Activities in the National Comprehensive Cancer Control Program

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Abstract

Background—Workplaces are one setting for cancer control planners to reach adults at risk for cancer and other chronic diseases. However, the extent to which Centers for Disease Control and Prevention-funded National Comprehensive Cancer Control Programs (NCCCP) implement interventions in the workplace setting is not well characterized.

Methods—We conducted a qualitative content analysis of program action plans submitted by NCCCP grantees from 2013–2015 to identify and describe cancer prevention objectives and interventions in the workplace setting.

Results—Nearly half of NCCCP action reports contained at least one cancer prevention objective or intervention in the workplace setting. Common interventions included education about secondhand smoke exposure in the workplace, and the importance of obtaining colorectal cancer screening.

Conclusion—Workplace interventions were relatively common among NCCCP action plans, and serve as one way to address low percentages of CRC screening, and reduce risk for obesity- and tobacco-related cancers.

Keywords

workplace; neoplasms; primary prevention; early detection of cancer; health promotion

INTRODUCTION

Despite a steady decline in overall cancer death rates since the early 1990's [1], cancer remain the second leading cause of death in the United States, accounting for more than half a million deaths annually [2]. Targeting people in the workplace is a model designed to maximize the efficacy and efficiency of healthcare delivery for the approximately 140 million Americans who are working [3]. Several factors highlight the importance of cancer

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prevention at the workplace [4]. Although incidence of tobacco-related cancers is declining [5], approximately one in five workers smoke cigarettes [6]. Lack of nutritious food, inadequate physical activity, and excess weight collectively cause 30% of the cancer burden in the United States [7–9]. Obesity is increasing among working age adults, and an increasing number of individuals in the workforce are at the minimum age for screening services [3, 4, 8, 10].

The Centers for Disease Control and Prevention (CDC) promotes worksite wellness initiatives and provides resources to facilitate intervention development through several programs including the National Healthy Worksite Program (http://www.cdc.gov/nationalhealthyworksite/index.html). Additionally, the Guide to Community Preventive Services details evidence-based disease interventions (including screening interventions) that can be used in the workplace setting (www.thecommunityguide.org/worksite/index.html) and effective workplace programs can be found on the National Cancer Institute's Research Tested Intervention Programs (RTIPs) website (http://rtips.cancer.gov/rtips/index.do). While cancer prevention interventions in the workplace are recommended and have been found effective in multiple studies and settings [11–13], the extent to which CDC's cancer programs incorporate these interventions is unclear. The National Comprehensive Cancer Control Program (NCCCP), funded by CDC, provides financial support to 65 states, tribes, and territories in the United States to form coalitions or partnerships who develop formal, publicly available cancer plans based on the local cancer burden (http://www.cdc.gov/cancer/ncccp/index.htm). The cancer plans provide a focal point for the design, implementation, and evaluation of public health interventions in cancer control [14]. Each year, NCCCP grantees provide more descriptive information to CDC on the actual implementation of interventions described in their cancer plans in standardized action plan progress reports (i.e. action reports). These action reports contain more specific and timely information on NCCCP activities.

In this study, we review current NCCCP action reports to assess the presence, type, and scope of worksite-specific cancer prevention activities in the NCCCP. We examine both primary prevention (e.g., healthy lifestyle changes) and secondary prevention (cancer screening) activities and describe the interventions used.

Methods

All NCCCP action reports from 2013–2015 contained in CDC's Web-based chronic disease management information system (CDMIS) were searched for workplace setting intervention content (http://www.cdc.gov/cdmis/index.html). CDMIS captures programmatic information, resources, and detailed information on priority objectives and interventions. CDMIS is a secure system that meets all federal requirements and approvals for public data collection (OMB #0920-0841). The action report consists of five-year project period objectives (PPOs) that correspond to the total length of the funding period, annual objectives (AOs) for each year of the funding period, narrative details on progress, and associated activities with staff and partner assignments. These data are reported to CDC as a condition of receiving CDC funding.

We queried annual NCCCP action reports of NCCCP grantees for the select time period covering 2013–2015 so as to include only the most recent information. We limited our query to annual objectives focused on implementing or evaluating interventions in the workplace setting, which were recorded by grantees using pre-defined response options available in CDMIS for annual objectives.

Data analysis

Initial query results were downloaded into Microsoft Excel for further analyses. We reviewed each AO for relevance based on its associated PPO, a text field describing the public health impact of the AO, and narrative descriptions of progress toward meeting the objective and the types of partners involved. We removed objectives from the analysis that did not include workplaces or employees as specific recipients of or directly impacted by the intervention or an organizational or local policy change. For example, food procurement policies adopted by state agencies were included if employees were part of the target population, not just part of a larger community of recipients of programs administered by the agency. We developed a brief codebook to assist with coding workplace content into meaningful categories. We used CDC's Workplace Health Promotion initiative (http://www.cdc.gov/workplacehealthpromotion/index.html) as a framework to categorize interventions as a health-related program (e.g., worksite wellness program, educational campaigns), health-related policy (e.g., written policies allowing flex time or paid time off for cancer screening), health benefits (e.g., insurance incentives or personalized reminders for cancer screening), or environmental support (e.g., healthy food or beverage options, on-site fitness center or cancer screenings). Multi-component interventions were coded to multiple categories. We also coded content according to pre-defined primary and secondary cancer prevention categories: nutrition, physical activity, breastfeeding support, tobacco control, ultraviolet light (UV) radiation exposure for primary prevention; and breast, cervical, and colorectal cancer screening for secondary prevention. For objectives that required more information in order to properly categorize the specific strategy or intervention, we separately reviewed products (e.g., PowerPoint presentations, fact sheets, toolkits) uploaded to CDMIS. Frequency counts and percentages were calculated in MS Excel for each coded category.

RESULTS

We identified 25 states, three Pacific Island jurisdictions, and four tribes or tribal organizations with workplace interventions to address cancer control (Table 1). The U.S. region with the highest percentage of NCCCP grantees with workplace interventions was the Midwest (28.1%). Among the preventive health behaviors and risk factors addressed, tobacco control was most frequently reported by programs (46.9%) followed by colorectal and breast cancer screenings (43.8% and 31.3%, respectively). Interventions to address nutrition and physical activity were less frequently reported (28.1% each).

Workplace intervention strategies most commonly focused on health-related organizational policy (81.3%) followed by health-related programs (71.9%), while facilitating cancer prevention through environmental support was the least common strategy used by programs

(34.4%, Table 2). Many programs implemented multi-component interventions, or reported multiple workplaces implementing different interventions. Organizational policy approaches included examples such as smoke-free workplaces or healthier food options in vending machines (as part of food procurement policies) or guidelines addressing healthy food options at meetings. Example program interventions included offering tobacco cessation or nutritional education programs. Over a third of programs described interventions involving health benefits, such as sending client reminders to employees covered under the employer's health plan who are not up-to-date with cancer screening. Environmental support included interventions to reduce skin cancer risk by providing workers with shade structures, protective clothing, and hats.

DISCUSSION

Our analysis indicates that nearly half of NCCCP grantees are planning or implementing interventions in the workplace setting to address a variety of cancers with modifiable risk factors or evidence-based screening recommendations. The most commonly addressed prevention area was tobacco control followed closely by colorectal and breast cancer screening with strategies and objectives mostly aligned with health-related organizational policy and the creation of health-related programs, which often involved small media campaigns and awareness activities.

While tobacco control is the most often reported worksite intervention by NCCCP grantees, there is room for improvement by grantees in this area. Tobacco use causes 12 different types of cancer [15], and over 500,000 tobacco-related cancers are diagnosed each year in the United States [16]. Even with the success of tobacco control programs and campaigns in the U.S. and within the workplace [17–20], lung cancer remains the leading cause of cancer mortality among all U.S. males and females [21, 22]. Tobacco use affects the individual user, as well as those exposed to secondhand smoke [15]. Many states have legislation in place to protect workers from secondhand smoke; however, some workers residing in the lower Midwest and South have reported being in work conditions that are not tobacco-free [23, 24]. Additionally, while workers may have protection indoors, smoking may still be permissible outdoors, or in company or city-owned vehicles, thus exposing nonsmokers to secondhand smoke in the workplace [25, 26]. Workers in settings such as bars, restaurants, and casinos may be routinely exposed to tobacco smoke if local ordinances or business policies are not in place to protect them [27]. Since worksite smoking restrictions have been shown to improve health outcomes and are effective at reducing the prevalence of smoking and consumption of cigarettes [28–30], NCCCP coalitions or partnerships can encourage employers to designate themselves as tobacco-free and offer tobacco cessation programs to their employees. Worksite-based incentives and competitions plus additional interventions have been shown to result in a healthier workforce by increasing the number of workers who quit tobacco products [31]. Quitline referrals are another option for workplaces to address tobacco cessation [32–34].

While almost half of programs focused on screening, colorectal cancer screening remain lower than national objectives [35], and increasing programmatic-driven workplace interventions are one way to reach adults aged 50 – 64 years, who tend to have lower

screening than adults at traditional retirement age [36]. Client reminders are an evidence-based intervention to raise cancer screening [37]. We found that some NCCCP grantees are implementing client reminders for routine cancer screenings based on insurance claims, particularly within their own workplace and other state agencies using the same insurance plans or benefits administrator. Coordination of on-site screening activities at large worksites would enable high volumes of workers to receive care with reduced work disruption, and multiple screenings (colorectal cancer plus breast cancer, for example) could occur at the same on-site health event. Workplace wellness programs can partner with local hospitals, health departments, or community-based organizations to distribute fecal occult blood tests (FOBT) at the worksite for employees to take home and mail directly to the laboratory, and encourage employees with abnormal test results to follow-up with their health care providers [38]. These efforts reduce structural barriers to screening and can increase screening [39]. For smaller employers, joint ventures with other local small businesses at centralized places might be advantageous to implementing workplace wellness programs. Program administrators could also recommend time off work or clocking out policies to enable individuals at both large corporations and at small businesses to receive their necessary preventive care.

NCCCP grantees could do more to address nutrition, obesity and physical activity in the workplace. Obesity and/or physical activity leads to several cancers including esophageal, pancreatic, colon, kidney, breast (among women), and uterine cancers [7, 9]. Obesity and physical inactivity have been described as the second leading preventable cause of cancer [7, 8]. Traditionally the evidence base for worksite wellness programs and policies has been stronger for tobacco cessation and control, and although many nutrition and physical activity policy and environmental interventions remain promising practices, the evidence base is growing for workplace interventions in this area [40–42]. It is expected that there will be opportunities for NCCCP grantees to address primary prevention in workplace settings, particularly those programs partnering with other chronic disease programs to address common risk factors for diabetes, cancer, and cardiovascular disease. For example, decision prompts at stairways and environmental supports for physical activity combined with promotional activities (e.g., offering and promoting onsite fitness centers) both are recommended strategies by the Community Guide to increase physical activity [43]. Assessment of health risks with feedback combined with health education programs is effective at reducing tobacco use, excessive alcohol use, and blood pressure and cholesterol levels, as well as increasing use of healthcare services [44]. Obesity prevention programs in the workplace that address either nutrition or physical activity may also effective [42].

Despite addressing universal health issues, such as tobacco cessation and cancer screening, each CCC program needs to consider its own unique context and populations when developing worksite interventions. For example, one program intervention was dedicated to reduction of UV exposure with a focus on increasing the number of ski resort employees who received skin cancer education. Such an intervention demonstrates that programs with certain unique population characteristics are focusing cancer prevention efforts accordingly, and programs with comparable demographics/workplace settings can consider inclusion of similar measures in their plans. While there are workplace enhancements that can be done, there are some barriers that NCCCP grantees may encounter. These include gaining

commitment from businesses and the time required to build substantive relationships and partnerships in the business sector [45]. Some NCCCP grantees may find it easier to start with coalition partner organizations or organizations with a vested interest in health such as health care organizations and insurance companies in the development of these partnerships. Providing technical assistance and support to small businesses can improve their implementation of health promotion programs [46, 47]. Peer-to-peer networking among NCCCP grantees and building communities of practice are strategies for programs to share practice-based evidence on how to effectively implement workplace interventions.

While this assessment provides current information on interventions that are being undertaken by the NCCCP, there are some limitations inherent in this content analysis. First, we used only one abstractor for conducting the query and categorizing the results, although this approach is consistent with previous NCCCP content analyses [48–50]. Second, the search is only for one time period, and interventions that were implemented before 2013, or planned for after 2015 will not have been included.

In conclusion, NCCCP grantees can focus on the adoption of worksite measures directed at cancer prevention with particular, though not exclusive, focus on tobacco cessation, obesity reduction, and cancer screening. This may be the ideal setting to reach many adults who may not otherwise be able (because of time restraints) to engage in healthy behaviors. Our content analysis provides NCCCP grantees currently without worksite cancer prevention activities and objectives in their plans with example objectives and interventions to adapt and modify for their own populations. By shifting the paradigm from reactive to proactive, programs and public health professionals help lessen the burden of healthcare costs on businesses while improving the quality of life and longevity for U.S. workers.

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Table 1

Characteristics of Comprehensive Cancer Control Programs with workplace objectives or interventions in their action plans, 2013 – 2015, n=32

Characteristic	Number of Programs (%)
Jurisdictional setting	
State	25 (78.1)
Pacific Island Jurisdiction	3 (9.4)
Tribe/Tribal Organization	4 (12.5)
Census region	
Northeast	4 (12.5)
Midwest	9 (28.1)
South	8 (25.0)
West	8 (25.0)
Territory/Pacific Island Jurisdiction	3 (9.4)
Preventive health behavior or risk factor addressed	
Nutrition	9 (28.1)
Physical activity	9 (28.1)
Tobacco	15 (46.9)
UV exposure	5 (15.6)
Breastfeeding	3 (9.4)
Breast cancer screening	10 (31.3)
Cervical cancer screening	6 (18.8)
Colorectal cancer screening	14 (43.8)

UV=ultraviolet

Table 2

Workplace intervention strategies along with examples and associated objectives from Comprehensive Cancer Control action plans, 2013 – 2015

Intervention Strategy	Number of Programs, (%)	Example Intervention[a]	Associated Objective from CCC Action Plan
Health-related program	23 (71.9)	Tobacco cessation education	"Increase the number of worksites incorporating a tobacco treatment education program…"
		Nutrition counseling	"Increase the percent of overweight or obese adults (18 and over) who receive targeted nutrition counseling with follow up support…"
Health-related policy	26 (81.3)	Organizational policies for serving healthy foods at meetings or healthy food procurement policies	"Increase the number of local health departments and state government agencies with a wellness committee authorized to address standards for nutrition and physical activity…"
		Organizational workplace policies or local ordinances addressing smoke free work environments (including city vehicles and the outdoor campus)	"Increase the percent of adults who report being free from exposure to second-hand smoke in the workplace…"
Health benefits	12 (37.5)	Send client reminders to employees covered under the employer's health plan who are not up-to-date with screening	"Increase the number of client reminders mailed to adults ages 50–75, covered under the State of [State] health plan, who are eligible for colorectal cancer screening…"
		Provided an insurance incentive for employees who participated in a health risk assessment, biometric screening and one-on-one education session	"Increase the number of workplaces implementing cancer screening interventions…"
Environmental support	11 (34.4)	Provide shade or sunscreen stations in outdoor workplaces in addition to protective clothing and hats	"Increase the number of work sites that adopt, at a minimum, three of the recommended policy guidelines from the UV Protection Model Policy…"
		Reduce structural barriers to cancer screening by providing on-site mobile mammography or offering FIT or FOBT test kits for colorectal cancer screening	"Increase the number of new screening mammograms resulting from an educational campaign conducted through insurance companies and worksites"

[a]Some interventions fall under multiple strategy categories. For example, on-site mobile mammography may be both a program and environmental support because it reduces structural barriers to screening and it can be offered as a wellness program.